WTE Growth in China

Chongqing Waste to Energy Research and Technology Institute
October, 16. 2008
China Municipal Solid Waste

- High MSW generation and inventory in China
- No “formal” sorting
- High moisture, Low Heating value
MSW in China
Status of Waste Management in China

Waste disposal in the past—Aerobic Digestion
Status of Waste Management in China

Current waste disposal — Landfilling
Status of Waste Management in China

Future of Waste Management——Waste-To-Energy

Chongqing Tongxing Plant
• 67 facilities built in China by 2005
• Treatment capacity: 33,010 T/D by 2005
• 140 facilities built or under construction in China so far

◆ The National “11th Five-Year Plan” waste disposal technology roadmap

◆ The National “11th Five-Year Plan” waste disposal facilities

◆ Regional WTE plant planning

(China updates national plan every five years.)
About CWTERT Institute

Deputy Mayor attended Signing Ceremony
To build domestic R&D center in WTE industry, WTE technology personnel training base and platform for the development of WTE industry.
Research Plans

- Research on waste properties
- Research on waste pre-processing systems

- Development of WTE combustor and grate systems
- Research on control systems

- Investigation of the pollutant formation mechanisms

- Research on waste treatment of landfilled MSW and sludge
Resources

- Workshop and laboratories
- Equipment
- Software
- Researchers
Equipment

machining center
美国法道数控铣床

high speed machining center
瑞士米克郎高速铣床

Coordinate Measuring Instrument
三坐标测量仪

EDM
电火花成型机
Waste Analysis Instruments  垃圾特性测试仪器
## Waste Composition Analysis

<table>
<thead>
<tr>
<th>Sample</th>
<th>Food</th>
<th>Plastics</th>
<th>Paper</th>
<th>Wood</th>
<th>Fiber</th>
<th>Glass</th>
<th>Metal</th>
<th>Slag</th>
<th>Others</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>1#</td>
<td>41.61</td>
<td>15.00</td>
<td>12.56</td>
<td>1.08</td>
<td>2.06</td>
<td>2.82</td>
<td>1.12</td>
<td>22.96</td>
<td>0.78</td>
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<tr>
<td>2#</td>
<td>52.00</td>
<td>12.30</td>
<td>7.37</td>
<td>0.34</td>
<td>1.43</td>
<td>3.78</td>
<td>0.23</td>
<td>22.23</td>
<td>0.32</td>
<td>100.00</td>
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<tr>
<td>3#</td>
<td>52.26</td>
<td>17.26</td>
<td>16.62</td>
<td>1.67</td>
<td>0.83</td>
<td>0.58</td>
<td>0.00</td>
<td>10.26</td>
<td>0.51</td>
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<tr>
<td>Average</td>
<td>48.62</td>
<td>14.85</td>
<td>12.18</td>
<td>1.03</td>
<td>1.44</td>
<td>2.39</td>
<td>0.45</td>
<td>18.48</td>
<td>0.54</td>
<td>99.98</td>
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# Heating Value

<table>
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<tr>
<th>Sample</th>
<th>Food</th>
<th>Plastics</th>
<th>Paper</th>
<th>Wood</th>
<th>Fiber</th>
<th>Slag</th>
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</thead>
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<td>15635</td>
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<td>23634</td>
<td>16080</td>
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<td>18555</td>
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<tr>
<td>Average</td>
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<td>23429</td>
<td>16093</td>
<td>14516</td>
<td>20006</td>
<td>-</td>
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# Waste Moisture Measuring

<table>
<thead>
<tr>
<th>Sample</th>
<th>Moisture(%)</th>
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<tbody>
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<td></td>
<td>Food</td>
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<tr>
<td>1#</td>
<td>48.80</td>
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<td>2#</td>
<td>68.50</td>
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<tr>
<td>3#</td>
<td>72.78</td>
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<tr>
<td>Average</td>
<td>70.64</td>
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垃圾焚烧工艺研究 Waste to Energy Process Research

垃圾的燃烧模型 combustion model 垃圾燃烧工艺仿真 process simulation

19.
dynamic analysis of Atomizer

雾化器工作过程中的动力学分析
Atomizer Testing 雾化器测试
Equipment Research--Hydraulic System

垃圾焚烧装备研究——液压系统
Equipment Research--Shredder

垃圾焚烧装备研究——破碎机

25.
The patents CWTERT has gained:

- 6 invention patents in China
- 19 practical applicability patents in China
学术交流
Academic Exchange

Visiting Columbia University
CWTERT researched the design of WTE power generation system.

We advanced the technology progress of WTE in China.

We have established the base of production, teaching and research in western China.
Thank You